IBM

IBM System/7 Enhancements

5010E Processor Module

5010E Processor is an enhanced model of the existing 5010A and B Processor family. These enhancements consist of:
- Expanded monolithic storage — 5010E begins at 16K words and increases in 4K word increments to a maximum 64K words.
- Processor cycle time is 400 nanoseconds.
- 5010E is housed in 5026A2 or 5026CX enclosure.

Standard features include:
- Seven new instructions
- Storage protection (512 words per block)

Service Features

Improved maintenance package:
- Reduced average card callouts per failure.
- Reduced number of MAP pages searched to arrive at a solution.
- Diagnostics sequence rearranged on the cassette to provide faster problem definition.

An improved package will also be released for 5010A and B.

Education

- Product trained CE will require no additional training.
- Product support trained CE will require four-hour self-study course.

BSCA Feature Attachment

Binary Synchronous Communication Adapter (BSCA) is a feature available on 5010 Models A or E. It consists of one TP adapter which can operate over switched or leased lines in half duplex mode. Transmission speeds range from 1200 bps to 50K bps.

This feature allows the System/7 to communicate with:
- System/370 Models 115, 125, and 135 via the integrated communication adapter.
- System/370 Model 115 and larger via 2701 and 2703.
- System/370 Model 125 and larger via the 3704/3705 with NCP/VS.

- System/370 Model 115 and larger via 3704/3705 operating in emulator mode.
- System/3 Models 6, 10, and 15 via System/3 BSCA.
- System/7 5010 Models A or E via BSCA.

Service Features

- An exerciser program is provided (in paper tape) which will allow the customer, *if he so desires,* to wrap test the BSCA feature. This will allow him to determine if the problem is an IBM problem prior to placing a service call.
- Twelve lights are available to the CE to aid in BSCA problem definition.
- Two diagnostic programs are available to the CE.
  . Wrap test with FRU locating capabilities used in conjunction with MAP charts.
  . Down line test to allow exercising the lines to another system.

Education

- Product trained CE will require no additional training.
- Product support CE will receive a four-day education center course.
- Area designated and FTSC specialist will receive the four-day education center course plus two additional days of hands-on lab.

Low Cost Sensor I/O

● 5012 Multifunction Module

Two new features are:
- Low cost Digital Input (DI) — This feature provides a low cost non-isolated group of sixteen DI points.
- Low cost Digital Output (DO) — This feature provides an electronic high-speed contact output capable of driving devices with up to 450 milliamps. It provides sixteen non-isolated switches.

Education

No additional training is required for these features.

● 5014 Analog Input Module

Three new modules and one expansion feature have been added to the 5014 family. These consist of:
    5014 B1 Expansion Feature
    5014 D
    5014 E1
    5014 E2

5014 B1 Expansion Feature
- Permits the attachment of 5014 E2 (two maximum) to a 5014 B1.
- Allows a maximum of 384 AI multiplexed points.
- 5014 E2 utilizes mercury wetted relays.
- 5014 E2 utilizes the analog circuitry in the 5014 B1.
- Points driven at 200 points per second.

Low Cost Sensor I/O (cont'd)

5014 D Module
- New low cost AI module.
- Up to 128 points of AI.
- Mercury wetted relay multiplexer and/or new low cost dry contact relay multiplexer.
- Points driven at 100 points per second
- 5014 E1 (two maximum) may be attached to increase maximum number of points to 384.
- 5014 E1 utilizes analog circuitry contained in the 5014 D module.

5014 E1 and E2 Modules
- Consist of a frame which may be populated with multiplexer cards.
- Must be located directly beneath 5014 B1 or 5014 D.

Service Features
- New CE multiplexer card.
- Diagnostic program used in conjunction with multiplexer card.
- CE card may be left in an unused position. Diagnostic will automatically invoke fixed voltages on this card, thus decreasing test time and problem definition.

Education

No additional training required.

Programming Support

● System/7 Program Preparation Facilities (PPF)

A complementary addition to System/7 Host Program Preparation Facilities which allows the preparation of System/7 programs on the System/7.

Highlights
- An enhanced DSS/7 nucleus to supervise standalone program preparation on the System/7.
- A standalone macro assembler which is language compatible with, and which produces object code equivalent to the host program preparation assembler; also supports the new instructions associated with the System/7 Model E Processor Module.
- A standalone linkage editor to link-edit relocatable object modules produced by language translators.

- A standalone FORTRAN IV Compiler and Library program product incorporating sensor-based subroutines as defined by the Instrument Society of America (ISA Standard S61.1). (A program product with Class A Service.)
- A System/7 resident MACRO LIBRARY/RELOCATABLE provides an extension of the System/7 Assembler Language by supplying IBM supported control routines.
- A format facility compatible with the host format facility to prepare executable System/7 storage loads.

FE Education
- 13 days - education center for PPF
- 3 days - education center for FORTRAN Compiler

●Modular System Programs/7
Enhancements (MSP/7)

Currently available MSP/7 support
has been enhanced and made avail-
able to the standalone System/7
environment. Host MSP/7 support
will likewise be enhanced to main-
tain the compatibility between the
two System/7 program preparation
methods.

Highlights
-A new data management extension,
the Sequential Access Method, to
provide sequential device independ-
ent input and output at the logical
record (GET/PUT) level.
- A communications access method
to support BSCA at the logical
record (GET/PUT) level and the
read/write level.
- A new real-time facility, Simul-
taneous Disk Services, which is in-
corporated into the user's process
program to support disk input or
output concurrent with the execu-
tion of the process program.

- A new service program, the Source
Library Editor, to support the IBM
systems engineer and customer en-
gineer in the tailoring of the user's
operational pack and in the appli-
cation of source PTFs; can also be
used to create and maintain source
files for the language processors.
- Enhancements to current DSS/7
service programs to utilize the
Sequential Access Method.
- The ability to load relocatable
programs.
- Extensions to the DSS/7 command
language to control the program
preparation and loading process.

- Complete standalone program
preparation procedures in the form
of predefined catalog procedures
shipped with the programming
support.
- Documentation to fully describe
and guide the user in preparing his
standalone program preparation
operational pack.

Sensor-Based Installation Service (SBIS)

IBM has announced the implemen-
tation of Sensor-Based Installation
Service which is a joint DP, FE,
and GSD program to improve the
efficiency of installation of IBM
sensor-based systems.

Sensor-Based Installation Service
consists of two major elements,
Services and an Organization.

Services

- Subsystem Physical Planning
Assistance - Now provided in ad-
dition to previously provided *Sys-
tem* Physical Planning Assistance,
at no additional charge.
- Installation Guidance Service -
Provides IBM guidance to cus-
tomer on planning and installation
of subsystem, through FE Con-
tract Support Services (CSS) Agree-
ment.

- Installation Management Service -
Provides for IBM acceptance of
responsibility for planning and
installation of the subsystem,
through FE Contract Support
Services (CSS) Agreement.
- Subsystem Definition RPQs - For
some applications, complete
definition of portions of the sub-
system are available from IBM
through DP by means of RPQ.

● Organization Structure and
Responsibilities

DP Division
An individual in each District has
been assigned responsibility for co-
ordination of Sensor-Based Instal-
lation Service throughout his Dis-
trict. He will provide guidance to
the DP branch offices in the the
proposal and planning of sensor-
based systems, and will be the inter-
face to the Sensor-Based Installa-
tion Service functions of the FE
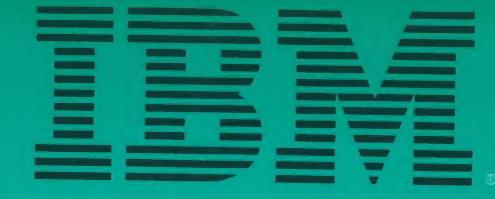and GS Divisions.

FE Division
Installation Planning Representa-
tives (IPRs) for sensor-based systems
systems have been named on an
Area basis to provide subsystem
physical planning assistance to the
customer, and to assist the FE
branch office in handling of CSS
(Contract Support Services) con-
tracts for installation of sensor-
based subsystems. They will also
be the FE interface to the Sensor-
Based Installation Service functions
of the DP and GS Divisions.

GS Division
The GS Division has established
an Installation Support Center at
Boca Raton, to provide in-depth
guidance and support to the field
through the DP and FE representa-
tives described above.

Sensor-Based Installation services
are only available to IBM custom-
ers incidental to the installation of
IBM equipment for use in a sensor-
based environment.